

**Testimony of  
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Before the  
House Committee on Natural Resources  
Subcommittee on Energy and Mineral Resources**

**Oversight Hearing:**

***“American Jobs and Energy Security: Domestic Oil Shale the Status of Research, Regulation and Roadblocks”***

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Good morning. My name is Helen Hankins, and I am the state director of the Bureau of Land Management’s Colorado office. It is my pleasure to testify before you on the Department of the Interior’s Oil Shale Program here in the Centennial State, which, along with Utah and Wyoming, is home to the nation’s largest reserves of oil shale.

**Background**

Oil shale is a type of rock that contains kerogen, a waxy organic material that can be refined to make oil. It is a resource that the nation has been trying to unlock for the past century because it is so abundant. U.S. resources are approximately 4.3 trillion barrels of oil in place, a significant portion of the world’s resources, according to the U.S. Geological Survey (USGS). However, after many attempts to develop the resource, no one has yet discovered how to extract it economically on a commercial scale.

The Energy Policy Act of 2005 directed the Department of the Interior to establish a leasing program for oil shale research and development, publish a programmatic environmental impact statement (PEIS), and launch a commercial leasing program. In 2008, the BLM published the PEIS that amended eight resource management plans in Colorado, Utah, and Wyoming to make approximately 1.9 million acres of public lands potentially available for commercial oil shale development and 431,224 acres for tar sands leasing and development.

In 2006 and 2007, the BLM issued six oil shale Research, Development, and Demonstration (RD&D) leases. The BLM’s goal is to provide an opportunity for companies to develop a new generation of oil shale technologies by establishing an orderly and environmentally responsible program that provides a fair return for taxpayers. In 2010, the BLM advanced three nominations for a second round of RD&D leases. For a variety of reasons, the BLM began a new planning process this year that would take a fresh look at what public lands are best suited for oil shale and tar sands development. This planning process will not disturb RD&D activities already under way; rather, any information developed from RD&D activities may help inform this planning process. In addition, the BLM anticipates taking a fresh look at the regulations governing oil shale development to ensure they reflect a sound management approach.

The BLM's RD&D program is essential to encouraging companies to test their bench-scale technologies and to help answer fundamental questions about how oil shale might be safely and economically developed on a commercial scale. The RD&D program began with the intent of avoiding the mistakes of the 1960s and 1970s, which left a legacy of spent shale piles, contaminated runoff, and multimillion dollar cleanups. One need not look further than the Naval Petroleum Oil Shale Reserves 1 and 3 here in Colorado to know that the oil is extractable, but at a significant cost to the environment and taxpayers. Approximately \$25 million has been spent on clean-up and monitoring that continues to this day. The work has included excavating spent shale and preparing a storage vault to protect a tributary of the Colorado River from potentially hazardous runoff.

The BLM learned from four leases issued in Utah and Colorado in the 1970s that companies must first demonstrate that their technology is economically viable and environmentally sound before approving a development process that could potentially disturb thousands of acres of public lands. On "Black Sunday" in 1982, a major oil shale player shutdown its oil shale development efforts, called the Colony Project, putting 2,000 people out of work in single day, and demonstrating the potential harm when communities count on an industry that hasn't proved the sustainability of its proposed development.

### **USGS Resource Assessments**

The Green River Formation in the Piceance Basin (Colorado), the Uinta Basin (Utah and Colorado), and the Greater Green River Basin (Wyoming, Colorado, and Utah) contains one of the largest known oil shale deposits in the world. Recent USGS assessments estimate an in-place oil volume of 1.53 trillion barrels in the Piceance Basin (<http://pubs.usgs.gov/dds/dds-069/dds-069-y/>), 1.32 trillion barrels in the Uinta Basin (<http://pubs.usgs.gov/dds/dds-069/dds-069-bb/>), and 1.44 trillion barrels in the Greater Green River Basin (<http://pubs.usgs.gov/fs/2011/3063/>). The oil shale deposit in the Piceance Basin is probably the world's most concentrated oil shale resource with as much as 400,000 barrels of oil in place per acre. It is important to note that these resource assessments are in-place resources rather than technically recoverable resources because there is currently no commercial oil shale development in the United States.

The mineral nahcolite is associated with high-grade oil shale deposits in the Piceance Basin, and because it is important as a leasable mineral, the USGS assessed its resource potential as well. Nahcolite has an in-place resource estimate of 43 billion short tons. The nahcolite is intimately associated with the oil shale horizons in the richest part of the basin and therefore will be affected by any oil shale development in that area.

The U.S. Geological Survey recently subdivided the 1.53 trillion barrels of in-place oil shale in the Piceance Basin into several subsets (<http://pubs.usgs.gov/fs/2010/3041/>). Of the 1.53 trillion barrels total, about 920 billion barrels (60 percent) exceed 15 gallons of oil per ton of oil shale (GPT), and about 352 billion barrels (23 percent) exceed 25 GPT. More than 67 percent of the total in-place resource, or 1.027 trillion barrels, is located under Federal lands. About 689 billion barrels (75 percent) of the 15 GPT total and about 285 billion barrels (81 percent) of the 25 GPT total are under Federal mineral (subsurface) ownership. An evaluation of the Federal oil shale resources in Wyoming is nearing completion and should be available in the near future.

## **Development Questions**

There are several issues that need to be addressed before a successful commercial oil shale program will be economically viable.

The first is whether the technologies that are currently being developed can become viable on a commercial scale. Some of the technologies under development would require vast amounts of energy, increasing production costs and creating a burden on the power grid. The companies working on these challenges report generally that they are several years away from knowing whether their technologies will work on a commercial scale.

The second is to understand the potential impacts of commercial oil shale development on Western lands, wildlife, and watersheds. Historically, the techniques of retorting or milling the shale have caused serious environmental consequences, creating large concentrations of contaminants in areas not designed to contain them. In the arid West where water supplies are extremely limited, much hinges on the question of water. Accordingly, we must have a better understanding of the impacts of oil shale development on the water supply.

The Government Accountability Office studied the issue of oil shale development impacts on water resources, and determined in an October 2010 report that: “Oil shale development could have significant impacts on the quality and quantity of water resources, but the magnitude of these impacts is unknown because technologies are years from being commercially proven, the size of a future oil shale industry is uncertain, and knowledge of current water conditions and groundwater flow is limited.” To address these important water questions, the USGS has begun to gather baseline data that would be used to analyze groundwater and surface water systems that could be affected by commercial-scale oil shale development.

In light of the many fundamental questions about oil shale that need to be answered, it is vital that the BLM administer a balanced, carefully planned RD&D program. As the BLM takes a fresh look at the regulations governing oil shale development, it will ensure that the regulations reflect the latest information about water, potential environmental considerations, and uphold its responsibility to deliver taxpayers a fair return on the development of this resource.

## **Moving Forward with RD&D**

Of the six leases issued in 2006 and 2007, five are in Colorado and one is in Utah. Activity is under way on the RD&D lease sites. American Shale Oil, which owns one of the leases, reports that its processing facilities are 90% complete with plans to initiate pilot testing soon. Other leaseholders also report progress in establishing extraction techniques.

In the second round of RD&D leases, three nominations, two in Colorado and one in Utah, advanced in October 2010. Analysis under the National Environmental Protection Act (NEPA) is under way to examine how the proposed technologies will affect the environment. Issuance of those leases will depend largely on the results of the NEPA analyses and other factors as the nominees refine their individual processes for developing oil shale.

This is an exciting time as these companies move forward, testing new technologies to harness this abundant resource. At the Department of the Interior, we are pleased to be part of the effort

to keep the oil shale program on an orderly and successful path, encouraging development while ensuring environmental protection.

**Conclusion**

Thank you again for the opportunity to testify on the Oil Shale Program. I would be glad to answer your questions.